

REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks. By the foregoing amendment, claim 1 has been amended and claims 3-5 are canceled. No new matter has been added. Claim 2 was previously withdrawn from consideration. Thus, claims 1 and 5-9 are currently pending in the application and subject to examination.

In the Office Action mailed March 16, 2006, the Examiner objected to claim 1 for informalities. Claim 1 has been amended responsive to this rejection. If any additional amendment is necessary to overcome this rejection, the Examiner is requested to contact the Applicants' undersigned representative.

The Examiner rejected Claims 1 and 5 under 35 U.S.C. § 102(b) as allegedly being anticipated over Peters et al. (U.S. Patent No. 6,435,465), hereinafter "Peters"; Claims 3-4 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peters; and Claims 6-8 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peters in view of Kuang et al. (U.S. Patent No. 6,590,299), hereinafter "Kuang". It is noted that claim 1 has been amended. To the extent that the rejections remain applicable to the claims currently pending, the Applicants hereby traverse the rejections, as follows.

The Applicants' invention, as now set forth in claim 1, is directed toward a hybrid vehicle including, in part, a combustion suspended idle operation comprising, a primary motor rotating the engine according to driving conditions of the vehicle while combustion within cylinders in the engine is suspended, wherein a rotational speed of the primary motor which is performing the combustion suspended idle operation is maintained at a rotational speed which can provide minimum friction on the engine and which can

generate a predetermined oil pressure, and wherein at least either an inlet valve or an exhaust valve is held closed during the combustion suspended idle operation by the predetermined oil pressure, as claimed in amended claim 1.

These claimed features of the invention effectively improve power consumption in hybrid vehicles by reducing waste in the power used from the hybrid power source, in part, through reducing pumping loss of the engine.

Peters teaches a hybrid vehicle where the engine is spun for a predetermined time to push any residual fuel out of the intake manifold in order to reduce emissions. Peters teaches a vapor management valve (VMV) which performs the vapor fuel or exhaust gas recirculation (EGR) where the VMV and EGR are disabled during the hybrid drive cycle. However, the Applicants submit that the vapor management valve of Peters is different than the inlet/exhaust valves of the present invention. Even if the VMV or EGR valve of Peters is closed, the effect on pumping loss on the engine is very small, in contrast to the reduction provided by the present invention, as claimed in claim 1. It appears that closure of the VMV itself would not have a pumping loss reduction effect at all. The EGR does not appear to affect a reduction in pumping loss as the valve is usually closed.

In addition, Peters does not disclose or suggest a predetermined oil pressure generated by the rotational speed of the primary motor, which holds the inlet and exhaust valves closed. In claim 1, it is oil pressure that closes the inlet and exhaust valve. The oil pressure for the claimed control is generated by the engine, which is driven by the primary motor.

Furthermore, the Applicants submit that Peters does not disclose a rotational speed of a primary motor which is performing the combustion suspended idle operation maintaining at a rotational speed which can provide minimum friction on the engine. The rejection acknowledges that Peters does not teach this feature. The rejection asserts that this feature would have been obvious because it is common knowledge in the art that engine friction above self-cooling levels can cause the engine mass to reach temperatures that irreversibly damage engine components. Assuming that this statement shows a motivation to maintain a level of engine friction below self-cooling levels, there is still no disclosure or suggestion of maintaining a rotational speed, of a primary motor which is performing a combustion suspended idle operation, which can provide minimum friction on the engine. The claim element requires minimal friction on the engine. This feature assists in preventing waste in the hybrid power source while power is being used. This requires maintaining a minimal level of engine friction during the combustion suspended idle operation, as claimed in amended claim 1, in contrast to a level of friction below self-cooling levels as suggested by the rejection.

Furthermore, the invention, as claimed in amended claim 1, includes maintaining a rotational speed of the primary motor during the combustion suspended idle operation which can both maintain a predetermined oil pressure (which is generated by the engine) and maintain minimized engine friction.

Peters does not disclose or suggest a hybrid vehicle comprising a combustion suspension idle operation wherein the rotational speed of a primary motor which is performing the combustion suspended idle operation is maintained at a rotational speed

which can both provide minimum friction on the engine and which can generate a predetermined oil pressure to hold either an inlet valve or an exhaust valve closed.

For at least these reasons, the Applicants submit that claim 1, as amended, is allowable over the cited prior art. As claim 1, is allowable, the Applicants submit that claims 6-9, which depend from allowable claim 1, are likewise allowable over the cited prior art.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Kuang. As discussed above for claim 1, from which claims 6-8 depend, the Peters reference fails to teach each and every limitation of amended claim 1, as described above. Kuang fails to cure the deficiency in Peters.

Therefore, the Applicants submit that neither Peter nor Kuang describe or suggest at least the features of a hybrid vehicle including in part a primary motor rotating the engine according to driving conditions of the vehicle while combustion within cylinders in the engine is suspended, wherein a rotational speed of the primary motor which is performing the combustion suspended idle operation is maintained at a rotational speed which can provide minimum friction on the engine and which can generate a predetermined oil pressure, and wherein at least either an inlet valve or an exhaust valve is held closed during the combustion suspended idle operation by the predetermined oil pressure, as claimed in amended claim 1.

With regard to each of the rejections under §103 in the Office Action, it is also respectfully submitted that the Examiner has not yet set forth a *prima facie* case of obviousness. The PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 U.S.P.Q.2nd 1596, 1598 (Fed. Cir. 1988). Both the case law

of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002).

In the Office Action, the Examiner merely states that the present invention is obvious in light of the cited references. See, e.g., Office Action at page 6. This is an insufficient showing of motivation for the combination of the references.

For at least these reasons, the Applicants submit that claims 6-8 are allowable over the cited prior art.

CONCLUSION

For all of the above reasons, it is respectfully submitted that the claims now pending patentability distinguish the present invention from the cited references. Accordingly, reconsideration and withdrawal of the outstanding rejections and an issuance of a Notice of Allowance are earnestly solicited.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300. The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment associated with this communication to Deposit Account No. 01-2300, with reference to attorney docket no. 107355-00086.

Respectfully submitted,

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